

LISTING OF CLAIMS:

Claim 1. (Original) An aircraft structure adapted for short takeoff and landing performance comprising:

a fuselage with a longitudinal axis;

a wing extending transversely of the fuselage and attached thereto, having a normal flight position and an area, the fuselage and the wing in the normal flight position having a stall angle;

thrust means attached to one of the fuselage and the wing, operable to move the fuselage generally in the direction of the longitudinal axis;

a deployable wing with a wing axis, operably connected to the fuselage so that an angle of attack defined between the longitudinal axis and wing axis can be adjusted in the range from 0° to a predetermined angle substantially exceeding the stall angle;

means for regulating the angle of attack of the deployable wing, operably connected between the deployable wing and the fuselage; and

means for changing the area of the deployable wing between a fully retracted value and a fully deployed value.

Claim 2. (Original) The aircraft structure of Claim 1 wherein the thrust means includes a gas turbine engine disposed in general longitudinal alignment with the fuselage.

Claim 3. (Original) The aircraft structure of Claim 2 wherein the gas turbine engine includes a ducted fan.

Claim 4. (Original) The aircraft structure of Claim 2 wherein the thrust means includes a Q-fan engine.

Claim 5. (Original) The aircraft structure of Claim 2 wherein the thrust means includes a diesel engine.

Claim 6. (Original) The aircraft structure of Claim 1 wherein the fuselage includes a horizontal tail surface and a vertical stabilizer surface extending downwardly from the tail surface.

Claim 7. (Original) The aircraft structure of Claim 6 wherein the thrust means is positioned between the fuselage and the vertical stabilizer surface to enhance low speed maneuverability.

Claim 8. (Original) The aircraft structure of Claim 1 wherein the deployable wing includes a flexible surface portion having an area substantially exceeding the area of the wing.

Claim 9. (Original) The aircraft structure of Claim 8 wherein the flexible surface portion is fashioned from a high-strength fabric.

Claim 10. (Original) The aircraft structure of Claim 9 wherein the fabric is fashioned from an aromatic polyamide fiber.

Claim 11. (Original) The aircraft structure of Claim 8 wherein the deployable wing includes a central spar and a spreader bar generally transverse to the central spar, the flexible surface portion being connected to the central spar.

Claim 12. (Original) The aircraft structure of Claim 1 wherein:
the deployable wing is housed in a furling tube having two ends, one end being pivotally attached to the fuselage; and
the means for regulating the angle of attack includes a lifting jack connected between the fuselage and the other end of the furling tube.

Claim 13. (Original) The aircraft structure of Claim 12 wherein:

the deployable wing includes a flexible surface portion; and

the furling tube contains:

a roller connected to the flexible surface portion, and

means for rotating the roller such that the flexible surface is wrapped
around the roller as the roller rotates.

Claim 14. (Canceled).

Claim 15. (Original) The aircraft structure of Claim 1 wherein the deployable wing is telescopically contained in the rigid wing, and is telescopically extensible from the trailing edge of the rigid wing.

Claim 16. (Original) The aircraft structure of Claim 15 wherein the deployable wing comprises a plurality of airfoil-like sections, each section being received by the trailing edge of a contiguous section.

Claim 17. (Original) The aircraft structure of Claim 16 wherein the plurality of sections is nested.

Claim 18. (Original) The aircraft structure of Claim 15 wherein the rigid wing has a flexible skin and a skin flexing means operable to open the trailing edge so as to ease egress of the deployable wing.

Claims 19-21. (Canceled).

Claim 22. (Previously Amended) A method of shortening the take-off of an aircraft structure having a standard wing with an area and a stall angle and comprising the steps of:

extending a deployable wing having an area substantially exceeding the area of the standard wing;

positioning the deployable wing at an angle of attack that substantially exceeds the stall angle of the standard wing;

powering the aircraft structure so that it begins to move along a ground surface; and

lifting the aircraft structure using both the wing and the deployable wing;

wherein the positioning step includes the steps of:

pinching upper and lower surfaces of the standard wing together to enlarge a trailing edge gap; and

telescopically extending a multi-section deployable wing through the trailing edge gap.

Claims 23-25. (Canceled).

Claim 26. (Previously Amended) A method of shortening the landing of an aircraft structure having a standard wing with an area and a stall angle and comprising the steps of:

extending a deployable wing having an area substantially exceeding the area of the standard wing;

positioning the deployable wing at an angle of attack that substantially exceeds the stall angle of [a] the standard wing;

suspending the aircraft structure using both the standard wing and the deployable wing;

wherein the positioning step includes the steps of:

pinching upper and lower surfaces of the standard wing together to enlarge a trailing edge gap; and

telescopically extending a multi-section deployable wing through the trailing edge gap.

Claim 27. (Previously Amended) An unmanned aircraft structure capable of short takeoff and landing performance comprising:

a fuselage having a generally longitudinal axis;

a wing transverse of the fuselage, having a normal flight position and a first wing area;

thrust means attached to one of the fuselage and the wing, operable to move the fuselage generally in the direction of the generally longitudinal axis;

a deployable wing, operably connected to the fuselage and operable to provide a second wing area; and

means for changing the second area of the deployable wing between a first minimum value and a second maximum value while maintaining an angle of attack such that the deployable wing generates significant lift.

Claim 28. (Original) The unmanned aircraft structure of Claim 27 wherein the deployable wing is generally shaped as a delta wing.

Claim 29. (Original) The unmanned aircraft structure of Claim 27 further including means for regulating an angle of attack of the deployable wing, connected between the deployable wing and the fuselage.

Claim 30. (Original) The unmanned aircraft structure of Claim 27 wherein the thrust means includes use of a diesel engine.

Claim 31. (Original) The unmanned aircraft structure of Claim 27 wherein the thrust means includes a gas turbine engine.